

## **Correlation of safe benzene duration (hours/day) and blood profile (leukocytes, hematocrit, hemoglobin) in the Osowilangun shoe home industry**

### **ABSTRACT**

Introduction: Benzene is a volatile organic solvent that easily enters the body when inhaled. Continuous exposure to benzene can cause interference with blood profiles such as leukocytes, hematocrit and hemoglobin. The Threshold Limit Value for benzene exposure is 8 hours /day, but the safe duration in each person is different in hours / day. One industry that uses benzene solvent is the home shoe industry in Osowilangun, Surabaya. The purpose of this study was to determine the relationship between the safe duration of benzene (tE) in hours / day with blood profiles (leukocytes, hematocrit and hemoglobin). Methods: This research was conducted at the Osowilangun shoe industry in Surabaya. This research is observational using bivariate analysis using Pearson correlation test. The population in this study amounted to 38 people and used accidental sampling method with 12 samples. The variables studied included the safe duration of toluene (hours/day) and blood profile (leukocytes, hematocrit and hemoglobin). Result: The average safe duration (tE) of workers in the Osowilangun shoe industry in hours / days is 0.0418. The majority of blood profiles (leukocytes, hematocrit and hemoglobin) are normal. Through Pearson correlation, the safe duration (hours/day) of benzene are leukocyte levels ( $p = 0.933$ ), hematocrit levels ( $p = 0.119$ ) and hemoglobin levels ( $p = 0,000$ ). Conclusion : There was no significant relationship between safe duration (hours/day) of benzene with leukocyte and hematocrit levels. However, there was a significant relationship between safe duration (hours/ day) of benzene and hemoglobin levels.

**Keyword:** Hemoglobin; Leukocyte; Hematocrit; Safe duration; Benzene